

NETWORKS

FAQ

Q Can I use any Draft 802.11n wireless network adaptor with any Draft 802.11n wireless router at full speed?

A Draft 802.11n is not an official standard, so different products are based on slightly different implementations. However, there are only two manufacturers of wireless chips: Broadcom and Atheros.

You should be able to use a Broadcom-based 802.11n wireless adaptor with a Broadcom-based 802.11n wireless router and get the increased throughputs. The same goes for Atheros-based products. Mixing products based on different chips is unlikely to work. We tried to get an Atheros-based D-Link RangeBooster N adaptor to talk to the Broadcom-based Apple Airport Extreme, but we got only a 54Mbit/s connection.

Even with matching chips it's not quite that simple, as each manufacturer has its own set of drivers and firmware. Until the full 802.11n standard has been released, you'll get the best results using adaptors from the same company as your router.

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APPLE AirPort Extreme

★★★★

£116 inc VAT

There's no doubting Apple's style, so it's no surprise that its AirPort Extreme looks good. The Mac mini-sized box looks gorgeous and wouldn't look out of place on a desk. Compared to the usual ugly boxes with protruding aerials that we're used to seeing, the AirPort Extreme is a work of art.

Apple has tried to keep things simple, so the router is configured entirely through the AirPort express utility. This scans for unconfigured routers and runs you through a wizard to help configure it. The wizard is thorough and prompts you to change the network name, turn on security and configure your internet connection.

Strangely, once the router has been configured there's no web-based interface to manage advanced settings; instead, you still have to use the utility. It's quite an annoying application to use. Making a change and applying it reboots the router and shuts down the utility's configuration page. If you want to make a change to another setting, you have to open the configuration page again.

Configuration of advanced options isn't always as easy as it should be. For example, Apple has a predefined list of common services for configuring port forwarding, but the odd naming scheme makes it harder to use than it should be. Instead of having a service called Web, Apple has called it 'personal web sharing'. Bizarrely, there are no settings for the AirPort's firewall, so you can't configure this security manually.

Apple doesn't support UPnP, opting for NAT-PNP instead, which offers a similar set of features. While this is widely supported by



Apple products and in Windows via Bonjour (www.apple.com/support/downloads/bonjourforwindows.html), other peripherals such as music players and video-streaming devices don't support it. We're not entirely surprised by this, as Apple often chooses to implement different standards.

We are, however, surprised by the lack of network adaptors. The AirPort Extreme is a Draft 802.11n router, so it works best with matching network adaptors (see FAQ, left). Apple, however, supplies only adaptors built into its newer notebooks, so there's no way to get the best out of this router using a PC. Even so, it performed well when we tested it with our Centrino notebook. It has good range, too,

with a throughput of 6.34Mbit/s at 20m. Using a Mac, though, it achieved the fastest throughput we've seen, 59.64Mbit/s.

If you have primarily new Macs, the AirPort Extreme is an excellent router. For anyone with mixed environments or primarily PCs, Apple's AirPort Extreme is too expensive and not flexible enough. Netgear's RangeMax Next Wireless ADSL2+ Modem Router (see 'Also consider...' below) is far better value and more flexible.

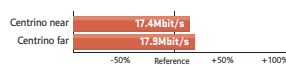
David Ludlow

SUMMARY

- ✓ Good range
- ✗ No PC adaptors
- ✗ Doesn't use common standards

WIRELESS ROUTER Draft 802.11n (XX), 3x 10/100 Ethernet ports, 1x WAN port
PART CODE MA073B/A
SUPPLIER www.pcw.com
DETAILS www.apple.com

PERFORMANCE (see page 58)



Also consider...

BUFFALO Wireless G Broadband ADSL2+ Modem Router

★★★★★

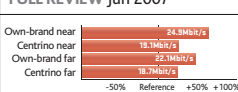
£37 inc VAT

BEST BUY If all you're after is a way of sharing

your ADSL connection wirelessly, this router is amazing value. Its performance with our Centrino notebook was excellent and we got very good range from it. It's a little tricky to set up, however, as the web interface is quite messy.



WIRELESS ADSL ROUTER 802.11g (54Mbit/s), 4x 10/100 LAN ports, WAN port (ADSL2+ modem), UPnP PART CODE WBM-R-G54 SUPPLIER www.lambda-tek.com DETAILS www.buffalo-technology.com



NETGEAR RangeMax Next Wireless Router

★★★★★

£89 inc VAT

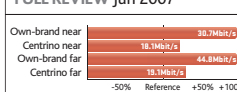
BEST BUY It might be a little fiddly to set up, but

Netgear's RangeMax Next Wireless Router provides excellent performance and range when used with its own adaptors. Centrino performance wasn't quite as good, but the range was still excellent.

Its price is very competitive, and there's an equally good ADSL version of the router, too.



WIRELESS ROUTER Draft 802.11n (270Mbit/s), 4x 10/100 LAN ports, WAN port, UPnP PART CODE WNR834B SUPPLIER www.lambda-tek.com DETAILS www.netgear.com



LINKSYS Wireless-G IP Phone

★★★★

£180 inc VAT

Skype is the most common VoIP service for travellers, as its range of phones and clients makes it easy to carry wherever you go. If you primarily use a Session Initiation Protocol (SIP) service such as Vonage or Freedom2surf, though, Linksys's Wireless-G IP Phone might be the product you're looking for.

The phone connects to any standard 802.11g wireless access point and your SIP account, so you can use your telephone service wherever you have a wireless network. Unlike the wireless Skype phones we've reviewed, the Wireless-G IP Phone has a full web browser. This means you can use it with hotspots, such as those provided in hotels and cafes, which require browser authentication.

The 240x320 screen has a high resolution for a handset. It's still not large enough to fit an entire webpage, but there are scroll bars so you can move around the page. It's no good if you're planning to surf the web, but good enough to log on to a hotspot. There's also an option to add a webcam's address into the phone, so you can quickly monitor a remote location. It's a neat feature if you want to watch your house while you're away.



Configuration is a little trickier than with a Skype phone, as you have to enter all the SIP settings manually, including proxy address, phone number, username and password. Once you've done that, though, every time the phone connects to a wireless network it will automatically connect your SIP account.

Call quality depends on the strength of the wireless network, but with a good signal you'll get decent quality from it. Sound quality isn't as good as a landline or a DECT-phone, but it's close. There's little voice processing and the sound is natural.

The Wireless-G IP Phone is quite expensive, even compared to WiFi Skype phones, which cost around £110. If you have a SIP account that you want to carry around, this is a good way of doing it. If you're looking for a VoIP service to travel with, Skype is more flexible and has a wider and cheaper range of handsets.

David Ludlow

NETGEAR SUMMARY

- ✓ Web browser
- ✗ Difficult to configure
- ✗ Expensive

WIRELESS VOIP PHONE 802.11g (54Mbit/s), SIP 2 client, 340x320 LCD, 32MB memory, 250 phone book entries
PART CODE WIP330-UK
SUPPLIER www.digital-fusion.co.uk
DETAILS www.linksys.com

VESENET 85Mbps HomePlug 3x Ethernet Adapter

★★★★

£40 inc VAT

The main problem with HomePlug is that you need one adaptor for each device you want to plug in. If you have a concentration of network devices, you'll probably find yourself running out of plugs. For this reason, VeseNET has released its 3x Ethernet Adapter. This puts three 10/100 Ethernet ports on a single 85Mbit/s HomePlug adaptor. Sadly, a faster 200Mbit/s HomePlug AV version is not available.

The 3x Ethernet Adapter is as easy to configure as all the other HomePlug adaptors we've reviewed. Plugging it in joins it to any unprotected network. If you want to use encryption, the utility provided lets you password-protect your network and encrypt traffic using 56-bit DES. Other than this, there's no configuration required.

Having three ports on one adaptor is a good idea in theory, but we were a little disappointed with the implementation. Instead of the three ports being connected to a 10/100 Ethernet switch, they communicate using HomePlug. This means you're limited to a maximum speed of 85Mbit/s, and the quality of the power in your home directly affects the communication speed. We had lots of problems using the 3x Ethernet



Adapter in our labs, and it managed a maximum transfer rate of only 1.74Mbit/s between two PCs connected to its ports. Running it at home improved matters no end, though, and we got a much healthier 52.82Mbit/s.

We were also provided with a single-port VeseNET Ethernet Adapter (£31), so we re-ran our test plugging one PC into the single-port adaptor and one into the 3x Ethernet Adapter. This time, our throughput of 25.44Mbit/s was in line with other 85Mbit/s HomePlug kit we've tested before.

If you have a lot of devices in one place that don't need to talk to each other, the HomePlug 3x Ethernet Adapter is very good value. However, if you have devices that do need to talk to each other, buy a single-port HomePlug adaptor and connect it to a dedicated Ethernet switch.

David Ludlow

SUMMARY

- ✓ Cuts down the sockets you need
- ✓ Good value
- ✗ No Ethernet switch

POWERLINE NETWORK ADAPTOR
HomePlug 85Mbit/s adaptor, 3x Ethernet ports
SUPPLIER www.solwise.co.uk
DETAILS www.vesenet.co.uk

PERFORMANCE (see page 58)



CHOOSING... Skype Kit

Follow the steps to find your ideal specs

PHONE TYPE: Wired USB handset

CALL TYPE: Skype only

EXTRAS: LCD and full keypad

Recommended minimum in grey

1 A handset with the minimum specifications listed above will work with a free Skype account and cost around £18. It's a more convenient way of making phone calls than a headset. As it's a wired USB handset, you'll have to sit at your PC to make calls. The handset's screen and keypad mean you can select your contacts without having to turn on your monitor, though. Using SkypeOut you can make calls to any other UK landline, and you'll pay around 1.4p a minute to most worldwide locations.

2 Do you want more flexibility with your Skype calls? A USB VoIP adaptor plugs into your PC and landline and works with your existing telephone. Using it, you can make calls using Skype or over your current telephone line. You'll still be restricted to sitting at your PC, though.

For around £50, you can buy a DECT Skype phone. This has a base station that plugs into your PC and landline, and a separate cordless phone that you can plug in anywhere else. The phone's screen lets you choose your Skype contacts remotely, but you'll still need to have your PC turned on.

3 Want to be rid of your PC altogether? A WiFi Skype phone costs around £110 and can connect to your existing network. It has a built-in Skype client, so you don't need your PC. Be careful if you plan to travel, though. Current WiFi Skype phones don't support browser authentication, which you need if you want to use a wireless hotspot.

The free Windows Mobile Skype client lets you turn an existing handheld or smartphone into a Skype client, too. If you want to use Skype over 3G or GPRS, check your mobile contract, as many operators don't allow you to do this.

4 If you want to use Skype as your main phone, buy a Skypeln number. These cost £8.05 for three months and let people with standard telephones call your Skype account. You can buy up to 10 telephone numbers per Skype account, and choose any country and area code. If you have many American contacts, for example, you can buy a US number so it's cheaper for them to call you.